

Physical Testing of Pulp and Paper, Methods & Service list

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GENERAL CONDITIONS

Prices

The price of a set of analyses is calculated on request.

Delivery times

Delivery times are estimated at the time of receipt of the order.

Sample storage after testing

Residual test material will be discarded one month after the customer has received the final report.

NOTE! Please indicate on the test instructions if the sample material is to be returned. The cost for this is to be charged to the customer.

Full confidentiality

The results of an assignment are the sole property of the client placing the order.

Other analyses and other types of tests

Please contact us to discuss analyses and tests other than those listed.

Explanation of method designations used in the list

SCAN-C, SCAN-CM etc. refer to SCAN-test Methods. The designation ISO refers to an International Standard, SS-EN refers to an European Standard and SS to a Swedish Standard. The pulp and paper industry are nowadays recommended to use ISO Standards and/or EN Standards for properties related to quality control and thus used in trade.

In short

Our testing and analysis facilitates provide most standardized methods used by the industry today and are used in almost all our pulp and paper research projects. In addition, new methodology is developed to meet the customers' needs if required. Commissions range from a few properties of a single sample up to full laboratory studies to support the development of new concepts and process changes. The expertise for our staff typically includes;

- Knowledge in pulp and paper making processes.
- Expertise in laboratory stock preparation.
- Dedicated paper testing.
- Customized lab procedures.
- Skillful use of well-equipped laboratories.
- Know-how regarding many different paper products.

The main methods are listed below.

Pulp Testing

Sampling

ISO 638	Dry matter content
ISO 5263-1	Wet disintegration of chemical pulp
ISO 5263-2	Wet disintegration of mechanical pulps at 20 °C
ISO 5263-3	Wet disintegration of mechanical pulps at 85 °C

Stock characterization

ISO 4119	Stock concentration
–	pH in suspension
	Z-potential
	Charge demand

Drainability and water retention

ISO 5267-1	Drainability, SR-number
ISO 5267-2	Drainability, CSF-number
ISO 23714, SCAN-C 62	Water Retention Value (WRV)

Fibre dimensions and shives content

ISO 16065-2	L&W FibreTester: length, width, shape factor, Coarseness
SCAN-CM 6	Fibre fractionation, McNett-apparatus
-	Preparation of fibre fractions in Celleco lab. fractionators
SCAN -CM 66:05	Content of fines, BDDJ > 76µm
TAPPI 275 sp-98	Somerville Shives content 0.10 mm or 0.15mm

Beating

ISO 5264-2	Laboratory beating - PFI mill method
ISO 5264-1	Laboratory beating - Valley beater method (only on special request)
-	Laboratory beating of pulp in Voith lab.refiner LR 40

Preparation of laboratory sheets

ISO 5269-1	Preparation of lab.sheets for physical testing acc. to ISO 5270
SCAN-CM 64	Preparation of lab.sheets with a closed water system
SCAN-CM27	Preparation of laboratory sheets for determination of light-scattering and light-absorption coefficient, opacity and Y-value
ISO 3688, SCAN-CM11	Preparation of laboratory sheets for measurement of ISO brightness (ISO 2470)
-	Preparation of lab.sheets with the Dynamic Sheet Former.
-	Preparation of multi-layer sheets, Dynamic Sheet Former
-	FEX drying of sheets
-	Biaxial drying of sheets
ISO 5270	Testing of general physical properties of lab. sheets (60g/m2 or 75 g/m2 sheets), (standardised number of test) strength properties, light scattering and air permeance.

Estimation of dirt and shives

ISO 5350-1	Estimation of dirt and shives – Inspection of lab. sheets (incl. disintegration and preparation of sheets)
ISO 5350-2	Estimation of dirt and shives – Inspection of mill sheeted pulp

Paper Testing

Sample preparation

ISO 187	Standard atmosphere for conditioning and testing
ISO 186	Sampling to determine average quality
ISO 5630-1, 5630-3	Accelerated Ageing
-	Calandring in laboratory

Composition

ISO 536	Grammage
ISO 534	Thickness
SCAN-P 88	Structural thickness
ISO 287	Moisture content
ISO 1762	Residue (ash) on ignition at 525 °C double tests
ISO 2144	Residue (ash) on ignition at 900 °C double tests
ISO 1762 ISO 2144	Residue (ash on ignition at 525 °C and 900 °C, double tests

Mechanical properties

SCAN-P 77	Fracture toughness (incl. tensile stiffness acc. to ISO 1924-3)
ISO 1924-2	Tensile strength, stretch and TEA
ISO 1924-3	Tensile strength, strain at break, TEA and tensile stiffness
SCAN P 20:95	Wet tensile strength and wet tensile strength retention
-	TSO (Tensile Stiffness Orientation) by ultra-sonic evaluation
ISO 1974	Tearing resistance – Elmendorf method
ISO 9895	Compressive strength – Short span test (SCT)
Tappi T833	Scott Bond
ISO 15754	Z-directional tensile strength
ISO 2758	Bursting strength of paper
ISO 2759	Bursting strength of board
ISO 5629	Bending stiffness – Resonance method
ISO 2493	Bending resistance
ISO 5626	Folding endurance
ISO 8226-1	Hygroexpansivity (66 ± 2) % RH
ISO 8226-2	Hygroexpansivity (84 ± 2) % RH

Surface and structure properties

ISO 15359	Static and kinetic coefficients of friction –Horizontal plane method, paper-paper e.g. top side MD – bottom side CD
ISO 8791-2	Bendtsen surface roughness
ISO 8791-4	PPS Print-Surf method & PPS Surface compressibility

Absorbency and permeance

ISO 535	Water absorbency, Cobb method
ISO 8787	Capillary rise of water, Klemm method
ISO 5636-3	Bendtsen air permeance
ISO 5636-5	Gurley air permeance

Optical properties

ISO 2470-1	ISO Brightness C/2°
ISO 2470-2	ISO Brightness D/65°
ISO 11475	CIE-Whiteness -UV (D65/10°)

ISO 5631-1
ISO 5631-2
ISO 2471
ISO 9416

Tissue

EN ISO12625-3
EN ISO 12625-4
EN ISO12625-5
EN ISO12625-6
EN ISO12625-7
SS-EN 12625-8

SCAN P 53
EN ISO 12625-9
EN ISO 12625-11
EN ISO 12625-12

Corrugated testing

ISO 12192
ISO 3035
ISO 7263
ISO 3037
ISO 5628
ISO 3036

L*, a* and b* UV (C2)
L*, a* and b* UV (D65/10°)
Opacity, Y-value
Light scattering and light-absorption coefficients

Tissue, Thickness, bulking thickness and apparent bulk density
Tissue, Tensile strength, stretch at break and TEA
Tissue, Wet tensile strength
Tissue, Grammage
Tissue, Optical properties
Tissue, Water absorption time and residual water absorption capacity, Basket immersion test method
Tissue, Air permeance Gurley method
Tissue, Determination of ball burst strength
Tissue, Determination of wet ball burst strength
Tissue, Tensile strength of perforated lines - Calculation of perforation efficiency

RCT, Ring crush method, compressive method paper and board
FCT, Flat crush resistance, of corrugated fibreboard
CMT/CMT30
ECT, Edgewise crush test
Bending resistance
Puncture resistance, of board